Appendix A: Additional Guidance for Metric Selection

Approaches and Techniques

The development of the Planning Framework has provided a new tool to help communicate how RESTORE projects (and programs) support the goals and objectives set forth in the Comprehensive Plan. During FPL development, each project proposal will indicate the priority technique(s) from the Planning Framework that a project will use to support its primary goal and objective. The Planning Framework provides guidance on which techniques are most suited to supporting each different Comprehensive Plan goal and objective (as depicted in Figure 2.1.1 of the Planning Framework). For programs, all projects within that program share the same primary goal and objective, but may use different techniques (from one or more approaches) to support that goal and that objective. For example, under a water quality program one project may use the Agriculture and forest management technique, while another uses the Land acquisition technique. Based on the Planning Framework, the primary and secondary objectives of these techniques include Restore, improve, and protect water resources, which is selected as the primary objective of the program.

Metric Selection

The Submission Guidelines instruct applicants to select metrics corresponding to the primary and secondary goal(s) for a project (or program). Building off of the Planning Framework, the Observational Data Plan Guidelines can be used to help select metrics appropriate for the selected goals and objectives. Metrics currently in use by RESTORE projects can be referenced by the approaches and techniques with which they are most likely to be employed. Each technique identified for a project (or program) should have one or more corresponding metrics selected in the proposal. Because some techniques can support multiple goals and objectives, the metrics listed in Table 1 will vary accordingly, and so care should still be taken to select the metric(s) most appropriate for tracking the primary and secondary goal(s) and objective(s) of the project. See the Observational Data Plan Guidelines for more information on selecting metrics and parameters that support the goals and objectives of the project.

Program Metrics

Members are encouraged to select a program-wide metric that captures the environmental or community resilience benefits of the program (e.g., Acres with restored hydrology, Number of stormwater/wastewater improvements), though each project funded under the program may not be captured by that metric. Additional metrics should be selected to capture the benefits of each of the techniques identified in the proposal. For programs with unspecified projects, metrics for the anticipated techniques should still be selected at the proposal stage. If it is difficult to quantify an estimated metric target as a single value, the metric narrative section may be used to describe a range of values or magnitude of change, and the target may be entered as TBD (i.e., “0.99”). Should the proposed program be selected for funding, metrics may be added, removed, or replaced, and metric targets may be adjusted, as appropriate at the project workplan application stage.

Table 1. Updated metrics available for selection in PIPER, organized by Planning Framework approaches and techniques. This chart is meant as a reference for likely metric selections. Combinations shown are not mandatory or exhaustive. Please see the Observational Data Plan Guidelines for more information on selecting metrics and parameters that support the goals and objectives of the project. The most current version of this table is maintained on the Council website at https://restorethegulf.gov/files/PIPER-Metrics. Please reference this table directly from the website to ensure information is up to date.

Approach	Technique	Metric	Name	Description
Create, restore, and enhance coastal wetlands, islands, shorelines, and headlands	Sediment placement	HR013	Wetland and shoreline habitat - Acres restored	Enter the number of acres restored (i.e., the project footprint), including marshes, beaches, flooded forests, swamps, mudflats, estuarine habitats.
		HR014	Habitat restoration - Land change rate	Enter the land change rate (acres/year) at the conclusion of monitoring, i.e., the ratio of (land to water)/time. Land change rates are calculated using changes in shoreline position, or multiplying average landward movement distance by the length of shoreline monitored. This metric should be selected for all projects that aim to reduce shoreline erosion, but is not exclusive to such projects.
		RES003	Community resilience - Number of residential, commercial, and public facilities benefiting	Enter the total number of residential, commercial, and public facilities benefiting from the project once the community resilience project is implemented. An example of the type of project where this metric would apply is a project whose primary benefit is enhanced hurricane protection for the community.
	Protect natural shorelines	HR002	Shoreline protection - Miles of shoreline protection installed	Enter the miles of shoreline protection installed. This should be selected and

				reported for coastal habitat shoreline restoration projects that protect against erosion, including construction of foreshore rock dikes and reef breakwaters. Living shoreline projects should instead select HR012.
		HR012	Shoreline protection - Miles of living shoreline installed	Enter the number of miles of living shoreline installed to buffer against shoreline erosion. Where applicable, use the notes field to indicate the width of the living shoreline (in feet). When conducting shoreline protection, always also select metric "HR014 - Habitat restoration - Land change rate."
		HR013	Wetland and shoreline habitat - Acres restored	Enter the number of acres restored (i.e., the project footprint), including marshes, beaches, flooded forests, swamps, mudflats, estuarine habitats.
		HR014	Habitat restoration - Land change rate	Enter the land change rate (acres/year) at the conclusion of monitoring, i.e., the ratio of (land to water)/time. Land change rates are calculated using changes in shoreline position, or multiplying average landward movement distance by the length of shoreline monitored. For activities that employ shoreline protection to reduce erosion, use pre-implementation data to update the metric baseline value in PIPER. This metric

				should be selected for all projects that aim to reduce shoreline erosion, but is not exclusive to such projects.
		RES003	Community resilience - Number of residential, commercial, and public facilities benefiting	Enter the total number of residential, commercial, and public facilities benefiting from the project once the community resilience project is implemented. An example of the type of project where this metric would apply is a project whose primary benefit is enhanced hurricane protection for the community.
Protect and conserve coastal, estuarine, and riparian habitats	Land acquisition	HC001	Conservation easements - Acres protected under easement	Enter the number of acres protected under long-term easement (permanent or >30-yr). Acres protected under easement should always be brought under improved management.
		HC002	Conservation easements - Miles of shoreline protected under easement	Enter the number of miles under long-term easement (permanent or >30yr). This includes miles of shoreline in coastal streams or open coast (i.e., beaches). Miles protected under easement should always be brought under improved management.
		HC003	Land acquisition - Acres acquired in fee	Enter the number of acres acquired in fee. Acres acquired in fee should always be brought under improved management.
		HC004	Land acquisition - Miles of shoreline acquired in fee	Enter the number of miles acquired. This includes miles of shoreline in coastal streams or open coast

				(i.e., beaches). Miles acquired in fee should always be brought under improved management.
		HM001	Nutrient reduction - Lbs. N avoided or removed	Enter the total amount of nitrogen removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HR014	Habitat restoration - Land change rate	Enter the land change rate (acres/year) at the conclusion of monitoring, i.e., the ratio of (land to water)/time. Land change rates are calculated using changes in shoreline position, or multiplying average landward movement distance by the length of shoreline monitored. This metric should be selected for all projects that aim to reduce shoreline erosion, but is not exclusive to such projects.
		RES003	Community resilience - Number of residential, commercial, and public facilities benefiting	Enter the total number of residential, commercial, and public facilities benefiting from the project once the community resilience project is implemented. An example of the type of project where this metric would apply is a project whose primary benefit is enhanced hurricane protection for the community.
	Habitat management and stewardship	HM001	Nutrient reduction - Lbs. N avoided or removed	Enter the total amount of nitrogen removed from the system (in lbs) or prevented from entering the system (in

				lbs/year). Use the notes field to specify the units of measurement being used.
		HM005	Agricultural BMPs - Acres under contracts/agreements	Enter the number of acres under contract(s) or agreement(s) to implement BMPs on privately owned land. This is typically agricultural land, but may include silvicultural or other land use types. Each acre should be entered only once (i.e., enter the number of acres under the contract/agreement, not the acres under individual BMPs, which may "double count" acres). Always also select the metric for # people enrolled (COI003). Other metrics may be selected to capture specific restoration activities, but do not count acreage toward the habitat restoration metrics HR004 - HR007, HR010, or HR013 (in order to avoid double counting).
		HR004	Upland or other habitat - Acres restored	Enter the number of acres restored. Habitat included in this metric has been restored to original (or target) habitat and ecosystem function. This metric should be used for habitats that span outside (or occur beyond) habitats captured by other metrics, such as upland forests.
		HR005	Artificial reef - Acres created/restored	Enter the number of acres impacted by the addition of artificial reefs and other habitat

				enhancements to benefit offshore marine life.
		HR007	SAV habitat - Acres restored	Enter the number of acres of submerged aquatic vegetation restored.
		HR008	Removal of invasive species - Acres restored	Enter the number of acres restored to native vegetation through the removal of invasive exotics. Acres counted using this metric should not overlap with acres counted toward restoration of wetlands or other habitats (i.e., HR004 - HR007, HR010, HR013) in order to avoid double counting.
		HR010	Riparian habitat - Acres restored	Enter the number of acres of riparian habitat restored to improve water quality. This may include riparian lake habitat (e.g., for stormwater pond plantings). Do not include acres where activities are fully captured by erosion control metrics (e.g., HR001, HR003).
		HR013	Wetland and shoreline habitat - Acres restored	Enter the number of acres restored (i.e., the project footprint), including marshes, beaches, flooded forests, swamps, mudflats, estuarine habitats.
		HR014	Habitat restoration - Land change rate	Enter the land change rate (acres/year) at the conclusion of monitoring, i.e., the ratio of (land to water)/time. Land change rates are calculated using changes in shoreline position, or multiplying average landward movement distance by the length of shoreline

				monitored. This metric should be selected for all projects that aim to reduce shoreline erosion, but is not exclusive to such projects.
		OEB001	Other environmental benefits - Number of metric tons of greenhouse gas emissions reduced	Enter the number of metric tons reduced annually.
		RES003	Community resilience - Number of residential, commercial, and public facilities benefiting	Enter the total number of residential, commercial, and public facilities benefiting from the project once the community resilience project is implemented. An example of the type of project where this metric would apply is a project whose primary benefit is enhanced hurricane protection for the community.
	Decommission unused, orphaned energy facilities	HC005	Decommissioning energy facilities - Number of wells plugged	Enter the number of abandoned oil and gas wells plugged during activity.
Restore hydrology and natural processes	Restore hydrologic connectivity	HM001	Nutrient reduction - Lbs. N avoided or removed	Enter the total amount of nitrogen removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM002	Nutrient reduction - Lbs. nutrients avoided or removed	Enter the total amount of nutrients removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM003	Nutrient reduction - Lbs. P avoided or removed	Enter the total amount of phosphorus removed from the system (in lbs) or

				prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HR009	Hydrologic restoration - Acres restored	Enter the number of acres with restored hydrology. This can include wetlands and upland buffer/transition habitats. Implementation may include restoration activities such as sediment removal for tidal connections, sediment placement to modify hydrologic connections, excavation and re-grading to modify existing water features, creation of water conveyance systems, etc.
		HR011	Hydrologic restoration - Miles of canals backfilled	Enter the number of miles of canals backfilled. Use the notes field to provide the average width of the canals backfilled.
		HR014	Habitat restoration - Land change rate	Enter the land change rate (acres/year) at the conclusion of monitoring, i.e., the ratio of (land to water)/time. Land change rates are calculated using changes in shoreline position, or multiplying average landward movement distance by the length of shoreline monitored. For activities that employ this technique to reduce shoreline erosion, use pre-implementation data to update the metric baseline value in

				PIPER. This metric should be selected for all projects that aim to reduce shoreline erosion, but is not exclusive to such projects.
		RES003	Community resilience - Number of residential, commercial, and public facilities benefiting	Enter the total number of residential, commercial, and public facilities benefiting from the project once the community resilience project is implemented. An example of the type of project where this metric would apply is a project whose primary benefit is enhanced hurricane protection for the community.
	Restore natural salinity regimes	HM001	Nutrient reduction - Lbs. N avoided or removed	Enter the total amount of nitrogen removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM002	Nutrient reduction - Lbs. nutrients avoided or removed	Enter the total amount of nutrients removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM003	Nutrient reduction - Lbs. P avoided or removed	Enter the total amount of phosphorus removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HR009	Hydrologic restoration - Acres restored	Enter the number of acres with restored

				hydrology. This can include wetlands and upland buffer/transition habitats. Implementation may include restoration activities such as sediment removal for tidal connections, sediment placement to modify hydrologic connections, excavation and re-grading to modify existing water features, creation of water conveyance systems, etc.
		HR011	Hydrologic restoration - Miles of canals backfilled	Enter the number of miles of canals backfilled. Use the notes field to provide the average width of the canals backfilled.
		HR014	Habitat restoration - Land change rate	Enter the land change rate (acres/year) at the conclusion of monitoring, i.e., the ratio of (land to water)/time. Land change rates are calculated using changes in shoreline position, or multiplying average landward movement distance by the length of shoreline monitored. For activities that employ this technique to reduce shoreline erosion, use pre-implementation data to update the metric baseline value in PIPER. This metric should be selected for all projects that aim to reduce shoreline erosion, but is not exclusive to such projects.
	Controlled river diversions	HM001	Nutrient reduction - Lbs. N avoided or	Enter the total amount of nitrogen removed

			removed	from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM002	Nutrient reduction - Lbs. nutrients avoided or removed	Enter the total amount of nutrients removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM003	Nutrient reduction - Lbs. P avoided or removed	Enter the total amount of phosphorus removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HR009	Hydrologic restoration - Acres restored	Enter the number of acres with restored hydrology. This can include wetlands and upland buffer/transition habitats. Implementation may include restoration activities such as sediment removal for tidal connections, sediment placement to modify hydrologic connections, excavation and re-grading to modify existing water features, creation of water conveyance systems, etc.
		HR013	Wetland and shoreline habitat - Acres restored	Enter the number of acres restored (i.e., the project footprint), including marshes, beaches, flooded

				forests, swamps, mudflats, estuarine habitats.
		HR014	Habitat restoration - Land change rate	Enter the land change rate (acres/year) at the conclusion of monitoring, i.e., the ratio of (land to water)/time. Land change rates are calculated using changes in shoreline position, or multiplying average landward movement distance by the length of shoreline monitored. For activities that employ this technique to reduce shoreline erosion, use pre-implementation data to update the metric baseline value in PIPER. This metric should be selected for all projects that aim to reduce shoreline erosion, but is not exclusive to such projects.
		RES003	Community resilience - Number of residential, commercial, and public facilities benefiting	Enter the total number of residential, commercial, and public facilities benefiting from the project once the community resilience project is implemented. An example of the type of project where this metric would apply is a project whose primary benefit is enhanced hurricane protection for the community.
Reduce excess nutrients and other pollutants to watersheds	Agriculture and forest management	HM001	Nutrient reduction - Lbs. N avoided or removed	Enter the total amount of nitrogen removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being

				used.
		HM002	Nutrient reduction - Lbs. nutrients avoided or removed	Enter the total amount of nutrients removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM003	Nutrient reduction - Lbs. P avoided or removed	Enter the total amount of phosphorus removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM004	Sediment reduction - Lbs. sediment avoided or removed	Enter the total amount of sediment removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM005	Agricultural BMPs - Acres under contracts/agreements	Enter the number of acres under contract(s) or agreement(s) to implement BMPs on privately owned land. This is typically agricultural land, but may include silvicultural or other land use types. Each acre should be entered only once (i.e., enter the number of acres under the contract/agreement, not the acres under individual BMPs, which may "double count" acres). Always also select the metric for # people enrolled (COI003). Other metrics may be

				selected to capture specific restoration activities, but do not count acreage toward the habitat restoration metrics HR004 - HR007, HR010, or HR013 (in order to avoid double counting).
		HM008	Pollutant reduction - Miles of hard surface improved	Enter the number of miles of roads or other hard surface improved to reduce runoff of sediment and other pollutants. This metric should not be used for roadway created or improved to increase recreational access.
		HR001	Erosion control - Acres restored	Enter the area over which restoration activities are performed to reduce surface and/or stream channel erosion. Do not include additional acres of watershed expected to achieve reduced sediment pollution. Do not include acres counted toward the riparian restoration metric (HR010). Possible restoration activities include plantings, regrading streambanks, gully repair, etc.
		HR003	Stream restoration - Miles of stream channel protection installed	Enter the miles of stream channel protection installed. This should be selected for streambank and streambed protection projects (e.g., using riprap) conducted to reduce erosion and resulting sediment pollution.
		HR004	Upland or other habitat - Acres restored	Enter the number of acres restored. Habitat included in this metric has been restored to original (or target) habitat and ecosystem

				function. This metric should be used for habitats that span outside (or occur beyond) habitats captured by other metrics, such as upland forests.
		HR010	Riparian habitat - Acres restored	Enter the number of acres of riparian habitat restored to improve water quality. This may include riparian lake habitat (e.g., for stormwater pond plantings). Do not include acres where activities are fully captured by erosion control metrics (e.g., HR001, HR003).
		HR013	Wetland and shoreline habitat - Acres restored	Enter the number of acres restored (i.e., the project footprint), including marshes, beaches, flooded forests, swamps, mudflats, estuarine habitats.
		RES001	Natural resource stewardship - Number of resource conservation measures implemented	Enter the number of resource conservation measures being implemented (or number of parties adopting each research conservation measure, if applicable). Resource conservation measures could include energy or water conservation measures, such as those resulting from an energy audit, renewable energy assessment, or water efficiency audit.
		RES003	Community resilience - Number of residential, commercial, and public facilities benefiting	Enter the total number of residential, commercial, and public facilities benefiting from the project once the community resilience project is implemented. An example of the type of

				project where this metric would apply is a project whose primary benefit is enhanced hurricane protection for the community.
		RES004	Pollutant reduction - CFU Reduction in bacterial loads	Enter the CFU reduction resulting from the activity.
	Stormwater management	HM001	Nutrient reduction - Lbs. N avoided or removed	Enter the total amount of nitrogen removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM002	Nutrient reduction - Lbs. nutrients avoided or removed	Enter the total amount of nutrients removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM003	Nutrient reduction - Lbs. P avoided or removed	Enter the total amount of phosphorus removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM004	Sediment reduction - Lbs. sediment avoided or removed	Enter the total amount of sediment removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM008	Pollutant reduction - Miles of hard surface improved	Enter the number of miles of roads or other hard surface improved to reduce runoff of sediment and other

				pollutants. This metric should not be used for roadway created or improved to increase recreational access.
		HR004	Upland or other habitat - Acres restored	Enter the number of acres restored. Habitat included in this metric has been restored to original (or target) habitat and ecosystem function. This metric should be used for habitats that span outside (or occur beyond) habitats captured by other metrics, such as upland forests.
		HR010	Riparian habitat - Acres restored	Enter the number of acres of riparian habitat restored to improve water quality. This may include riparian lake habitat (e.g., for stormwater pond plantings). Do not include acres where activities are fully captured by erosion control metrics (e.g., HR001, HR003).
		HR013	Wetland and shoreline habitat - Acres restored	Enter the number of acres restored (i.e., the project footprint), including marshes, beaches, flooded forests, swamps, mudflats, estuarine habitats.
		PRM001	Land management - Acres with reduced impacts	Enter the number of acres with reduced impacts from land use following implementation.
		PRM002	Land management - Miles with reduced impacts	Enter the number of miles with reduced impacts from land use following implementation.
		RES002	Watershed management - Number of upgrades to stormwater and/or wastewater systems	Enter the number of upgrades implemented to storm or wastewater systems. Upgrades could include activities

				such as taking septic systems offline, installing box culverts, upsizing drainage pipes, adding underground gravel storage, or creating groundwater recharge opportunities.
		RES003	Community resilience - Number of residential, commercial, and public facilities benefiting	Enter the total number of residential, commercial, and public facilities benefiting from the project once the community resilience project is implemented. An example of the type of project where this metric would apply is a project whose primary benefit is enhanced hurricane protection for the community.
		RES004	Pollutant reduction - CFU Reduction in bacterial loads	Enter the CFU reduction resulting from the activity.
	Erosion and sediment control	HM001	Nutrient reduction - Lbs. N avoided or removed	Enter the total amount of nitrogen removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM002	Nutrient reduction - Lbs. nutrients avoided or removed	Enter the total amount of nutrients removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM003	Nutrient reduction - Lbs. P avoided or removed	Enter the total amount of phosphorus removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify

				the units of measurement being used.
		HM004	Sediment reduction - Lbs. sediment avoided or removed	Enter the total amount of sediment removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HR001	Erosion control - Acres restored	Enter the area over which restoration activities are performed to reduce surface and/or stream channel erosion. Do not include additional acres of watershed expected to achieve reduced sediment pollution. Do not include acres counted toward the riparian restoration metric (HR010). Possible restoration activities include plantings, regrading streambanks, gully repair, etc.
		HR003	Stream restoration - Miles of stream channel protection installed	Enter the miles of stream channel protection installed. This should be selected for streambank and streambed protection projects (e.g., using riprap) conducted to reduce erosion and resulting sediment pollution.
	Wastewater system improvements	HM001	Nutrient reduction - Lbs. N avoided or removed	Enter the total amount of nitrogen removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM002	Nutrient reduction - Lbs. nutrients avoided	Enter the total amount of nutrients removed

			or removed	from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HM003	Nutrient reduction - Lbs. P avoided or removed	Enter the total amount of phosphorus removed from the system (in lbs) or prevented from entering the system (in lbs/year). Use the notes field to specify the units of measurement being used.
		HR013	Wetland and shoreline habitat - Acres restored	Enter the number of acres restored (i.e., the project footprint), including marshes, beaches, flooded forests, swamps, mudflats, estuarine habitats.
		PRM001	Land management - Acres with reduced impacts	Enter the number of acres with reduced impacts from land use following implementation.
		PRM002	Land management - Miles with reduced impacts	Enter the number of miles with reduced impacts from land use following implementation.
		RES002	Watershed management - Number of upgrades to stormwater and/or wastewater systems	Enter the number of upgrades implemented to storm or wastewater systems. Upgrades could include activities such as taking septic systems offline, installing box culverts, upsizing drainage pipes, adding underground gravel storage, or creating groundwater recharge opportunities.
		RES004	Pollutant reduction - CFU Reduction in bacterial loads	Enter the CFU reduction resulting from the activity.
Restore oyster habitat	Substrate placement	HR006	Oyster reef - acres	Enter the number of

			restored	acres of oyster reef restored. When conducting oyster restoration, always also select the population metric "SP001 - Population - Density (# individuals/acre) - Oysters."
		SP001	Population - Density (Number of individuals/acre) - Oysters	Enter the density of oysters per acre for oyster reef restoration projects.
	Living shorelines	HR006	Oyster reef - acres restored	Enter the number of acres of oyster reef restored. When conducting oyster restoration, always also select the population metric "SP001 - Population - Density (# individuals/acre) - Oysters."
		HR012	Shoreline protection - Miles of living shoreline installed	Enter the number of miles of living shoreline installed to buffer against shoreline erosion. Where applicable, use the notes field to indicate the width of the living shoreline (in feet). When conducting shoreline protection, always also select metric "HR014 - Habitat restoration - Land change rate."
		HR014	Habitat restoration - Land change rate	Enter the land change rate (acres/year) at the conclusion of monitoring, i.e., the ratio of (land to water)/time. Land change rates are calculated using changes in shoreline position, or multiplying average landward movement distance by the length of shoreline monitored. For activities that employ shoreline protection to reduce erosion, use

				pre-implementation data to update the metric baseline value in PIPER. This metric should be selected for all projects that aim to reduce shoreline erosion, but is not exclusive to such projects.
		RES003	Community resilience - Number of residential, commercial, and public facilities benefiting	Enter the total number of residential, commercial, and public facilities benefiting from the project once the community resilience project is implemented. An example of the type of project where this metric would apply is a project whose primary benefit is enhanced hurricane protection for the community.
		SP001	Population - Density (Number of individuals/acre) - Oysters	Enter the density of oysters per acre for oyster reef restoration projects.
	Enhance spawning and reserves	HR006	Oyster reef - acres restored	Enter the number of acres of oyster reef restored. When conducting oyster restoration, always also select the population metric "SP001 - Population - Density (# individuals/acre) - Oysters."
		SP001	Population - Density (Number of individuals/acre) - Oysters	Enter the density of oysters per acre for oyster reef restoration projects.
Planning (any technique)		PRM003	Planning - Number of management/governance plans developed	Enter the number of plans developed that had input from multiple stakeholders for regional planning efforts.
		PRM005	Planning - Number of monitoring plans developed	Enter the number of monitoring plans developed. This metric captures the actual number of monitoring plans written, but not

			yet being implemented.
	PRM011	Planning - Number of E&D plans developed	Enter the number of E&D packages developed. The number of plans should equal the number of completed packages (e.g., 100% design, certified), not the number of documents.
	PRM013	Planning - Number of environmental compliance documents completed	Enter the number of environmental compliance documents produced/compiled.
Promote natural resource stewardship and environmental education	COI001	Building institutional capacity - Number of FTE that successfully completed training	Enter the number of full-time equivalents (FTE) days of training for trainees. FTE refers to the ratio of paid hours during a period to # working hours in that period. May consider adding up part-time equivalents if the total amount is considered significant (e.g., 100 individuals who provide 100 1/4 FTE = 25 FTE days).
	COI002	Outreach/ Education/ Technical Assistance - Number of people reached	Enter the expected number of stakeholders in attendance at informational meetings, workshops, or events. Or, provide # of people who were directly involved in outreach, training and or technical assistance activities (this could be the number of participants in a workshop, classes, webinar, townhall, event, listeners, etc.).
	COI003	Outreach/ Education/ Technical Assistance - Number of people enrolled - BMPs	Enter the number of unique people enrolled to implement BMPs and expected to adopt tools and other improved management practices, etc., as a

			result. Always also select HM005 - Agricultural BMPs - acres under contracts/agreements.
	COI004	Outreach/ Education/ Technical Assistance - Number of users engaged online	Enter the number of users engaged in twitter, Facebook, blogs and other social media tools used to disseminate information about the project (include the type of social media tool and number and frequency of users). Note the URL address for each site and the unique visitors or users only.
	COI005	Volunteer participation - Number of volunteers participating	Enter the number of volunteers involved in the project. A list of volunteer names may help maintain a record of engagement. Where considered important, segmenting volunteers may be useful (e.g. age, gender, profession).
	COI006	Subgrants or agreements - Number of grants/agreements - dissemination of education/outreach materials	Enter the number of sub-grants or agreements to disseminate educational and outreach materials under the Council award. If possible, the metric for # people reached should also be selected (COI002).
	COI007	Building institutional capacity - Number of participants that successfully completed training	Enter the expected number of participants that successfully attended and completed the training and attained restoration and conservation skills.
	COI101	Economic benefits - Number of full-time permanent jobs created	Enter the number of full-time permanent jobs created that are directly attributable to the project or program implementation.

		COI102	Economic benefits - Number of part-time permanent jobs created	Enter the number of part-time permanent jobs created that are directly attributable to the project or program implementation.
		COI103	Economic benefits - Number of temporary jobs created	Enter the number of temporary jobs created that are directly attributable to the project or program implementation. These may be full-time or part-time jobs.
		RES001	Natural resource stewardship - Number of resource conservation measures implemented	Enter the number of resource conservation measures being implemented (or number of parties adopting each research conservation measure, if applicable). Resource conservation measures could include energy or water conservation measures, such as those resulting from an energy audit, renewable energy assessment, or water efficiency audit.
		RES005	Recreational improvements - Number of improvements to recreational resources	Enter the number of improvements to recreational habitat/resources resulting from the activity being completed as designed.
Improve science-based decision-making processes	Develop tools for planning and evaluation	PRM009	Research - Number of studies conducted	Enter the number of studies completed whose findings are reported to management. Value should include published data (either via your institution or by others using your data), metadata sets made available and published/unpublished datasets.
		PRM010	Research - Number of studies used to inform mgmt.	Enter the number of studies completed whose findings are used to adapt

				management/ inform mgmt. decisions.
		PRM012	Tool development for decision-making - Number of tools developed	Enter the number of tools developed. For example, tools can include numerical models, computer models, GIS models, and decision support systems.
	Increase environmental monitoring capacities	PRM004	Monitoring - Number of monitoring programs implemented	Enter the number of monitoring programs established or underway. Monitoring programs include any program with a written monitoring plan that is intended to track something other than the project's benefits (which should be monitored for all RESTORE-funded projects).
		PRM006	Monitoring - Number of streams/sites being monitored	Enter the number of streams/sites being monitored. This metric should only be used for monitoring intended to track something other than the project's benefits (which should be monitored for all RESTORE-funded projects).
		PRM007	Monitoring - Acres being monitored	Enter the number of acres being monitored using standard mapping tools/GIS or other methods. This metric should only be used for monitoring intended to track something other than the project's benefits (which should be monitored for all RESTORE-funded projects). Specify monitoring method(s) in the notes field.
		PRM008	Monitoring - Miles being monitored	Enter the number of miles monitored as a direct result of the project. This metric

				should only be used for monitoring intended to track something other than the project's benefits (which should be monitored for all RESTORE-funded projects). This metric should be selected for in-stream habitat restoration and shoreline restoration projects. Please indicate the width of the area being monitored in the notes field. For beach nesting birds, includes linear length of beaches or circumference of islands where suitable habitat has been confirmed.
			PRM014	Restoration planning/design/permitting - Increased Capacity - % increase in analytical capacity	Enter the % increase in analytical capacity resulting from Project/Program implementation. Values are entered as percentages; enter whole number percentages representing anticipated increases over a baseline of zero (e.g., baseline is entered as zero percent, and target value is entered as a 30% increase over baseline). In the notes field, please indicate the type of analytical capacity being increased; additional details can also be provided regarding baseline and target values (e.g., Baseline for water quality analysis is 100 samples per month; anticipated target value represents an increase to 130 samples per month).

	Comprehensive planning		See Planning	
Restore and revitalize the Gulf economy	Increase public access to natural resources and enhance recreational experiences	RES005	Recreational improvements - Number of improvements to recreational resources	Enter the number of improvements to recreational habitat/resources resulting from the activity being completed as designed.
		RES006	Recreational improvements - Acres acquired for public access/recreational use	Enter the total acres acquired for public access/recreational use.
		RES007	Recreational improvements - Number of visitors increased	Enter the increase in public use as a result of the activity.
	Restore and revitalize the Gulf economy	COI002	Outreach/ Education/ Technical Assistance - Number of people reached	Enter the expected number of stakeholders in attendance at informational meetings, workshops, or events. Or, provide # of people who were directly involved in outreach, training and or technical assistance activities (this could be the number of participants in a workshop, classes, webinar, townhall, event, listeners, etc.).
		COI004	Outreach/ Education/ Technical Assistance - Number of users engaged online	Enter the number of users engaged in twitter, Facebook, blogs and other social media tools used to disseminate information about the project (include the type of social media tool and number and frequency of users). Note the URL address for each site and the unique visitors or users only.
		COI101	Economic benefits - Number of full-time permanent jobs created	Enter the number of full-time permanent jobs created that are directly attributable to the project or program implementation.

		COI102	Economic benefits - Number of part-time permanent jobs created	Enter the number of part-time permanent jobs created that are directly attributable to the project or program implementation.
		COI103	Economic benefits - Number of temporary jobs created	Enter the number of temporary jobs created that are directly attributable to the project or program implementation. These may be full-time or part-time jobs.
		COI104	Economic benefits - Number of local contracts	Enter the number of contracts or agreements anticipated with individuals or companies that reside in, are headquartered in, or are principally engaged in business in a Gulf Coast State.
		COI105	Economic benefits - % costs contracted to existing local organizations	Enter the percentage of total program costs anticipated to be contracted with companies that reside in, are headquartered in, or are principally engaged in business in a Gulf Coast State.
		COI106	Economic benefits - Sacks of oysters relayed	Enter the number of sacks of oysters relayed from donor sites to increase productivity on harvestable reefs.
		COI107	Economic benefits - Linear feet of transportation channel improved	Enter the linear feet of channel restored to design depths for transportation purposes.